WHAT IS CLAIMED IS:

1. An image forming apparatus comprising:

read means for reading image signals in units of a predetermined number of pixels;

add means for adding pixel values of all consecutive pixels in a main scanning direction to concentrate image parts of image signals of pixels, which are read by the read means;

convert means for rearranging the pixels beside a screen-line position, based on an addition result, and which rearranges and outputs an excessive value if the addition result exceeds the maximum value of one pixel;

output means for outputting a laser beam based on the output signal of the conversion means;

latent image forming means for forming a latent image on a photosensitive member by the laser beam; and

image forming means for developing the formed latent image with toner to achieve image formation.

2. The apparatus according to claim 1, wherein,

supposing that the predetermined number of pixels which are read by the read means is three and that the three consecutive pixels are p(0), p(1), and p(2), input data is of n bits (2^n value), and values of the pixels are p'(0), p'(1), and p'(2),

where $p(1)+p(2)>2^n-1$ is given,

$p'(0)=p(0)$

$p'(1)=2^n-1$

$p'(2)=p(1)+p(2)-(2^n-1)$

exists,

or where $p(1)+p(2)\leqq 2^n-1$ is given,

$p'(0)=p(0)$

$p'(1)=p(0)+p(1)+p(2)$

$p'(2)=0$

exists,

and further, where $p(0)+p(1)+p(2)>2^n-1$,

$p'(0)=p(0)+p(1)+p(2)-(2^n-1)$

$p'(1)=2^n-1$

$p'(2)=0$

exists.

3. An image forming apparatus comprising:

a read section which reads image signals in units of a predetermined number of pixels;

a pseudo gradation processing section which performs pseudo gradation processing with respect to the image signals;

a pixel conversion section which receives a quantized image data signal after the pseudo gradation processing, performs pixel value conversion for the purpose of pixel modulation, and outputs it as an image data signal;

a pulse position signal generation section which outputs a pulse position signal indicating a laser drive position in a pixel;

a pulse width modulation section which receives

the image data signal and the pulse position signal, and outputs a laser drive pulse to a laser driver;

a laser beam output section which outputs a laser beam based on the laser drive pulse;

a latent image forming section which forms a latent image on a photosensitive member by the laser beam; and

an image forming section which develops the formed latent image with toner to achieve image formation.

4. The apparatus according to claim 3, wherein the image data signal expresses a pulse width of one pixel and corresponds to the laser drive time for a pixel.

5. The apparatus according to claim 4, wherein the pulse position signal is a signal having a constant cycle and is autonomously generated inside the pulse position signal generation section.

6. An image forming method comprising:

a first step of reading image signals in units of a predetermined number of pixels;

a second step of adding pixel values of all consecutive pixels in a main scanning direction to concentrate image parts of the image signals of pixels which are read;

a third step of rearranging the pixels beside a screen-line position based on an addition result, and of rearranging and outputting an excessive value if the

addition result exceeds the maximum value of one pixel;

a fourth step of outputting a laser beam based on the output signal;

a fifth step of forming a latent image on a photosensitive member by the laser beam; and

a sixth step of developing the formed latent image with toner to achieve image formation.

7. The method according to claim 6, wherein,

in the third step, supposing that the predetermined number of pixels which are read in the first step is three and that the three consecutive pixels are p(0), p(1), and p(2), input data is of n bits (2^n value), and values of the pixels are p'(0), p'(1), and p'(2),

where $p(1)+p(2)>2^n-1$ is given,

$p'(0)=p(0)$

$p'(1)=2^n-1$

$p'(2)=p(1)+p(2)-(2^n-1)$

exists,

or where $p(1)+p(2)\leqq 2^n-1$ is given,

$p'(0)=p(0)$

$p'(1)=p(0)+p(1)+p(2)$

$p'(2)=0$

exists,

and further, where $p(0)+p(1)+p(2)>2^n-1$,

$p'(0)=p(0)+p(1)+p(2)-(2^n-1)$

$p'(1)=2^n-1$

$p'(2)=0$

exists.

8. An image forming method comprising:

a step of reading image signals in units of a predetermined number of pixels;

a step of performing pseudo gradation processing with respect to the image signals;

a step of receiving a quantized image data signal after the pseudo gradation processing, performing pixel value conversion for the purpose of pixel modulation, and outputting it as an image data signal;

a step of outputting a pulse position signal indicating the laser drive position for a pixel;

a step of receiving the image data signal and the pulse position signal, and outputting a laser drive pulse to a laser driver;

a step of outputting a laser beam based on the laser drive pulse;

a step of forming a latent image on a photosensitive member by the laser beam; and

a step of developing the formed latent image with toner to achieve image formation.

9. The method according to claim 8, wherein the image data signal expresses the pulse width of one pixel and corresponds to the laser drive time for a pixel.

10. The method according to claim 8, wherein the

pulse position signal is a signal having a constant cycle and is autonomously generated inside a pulse position signal generation section.